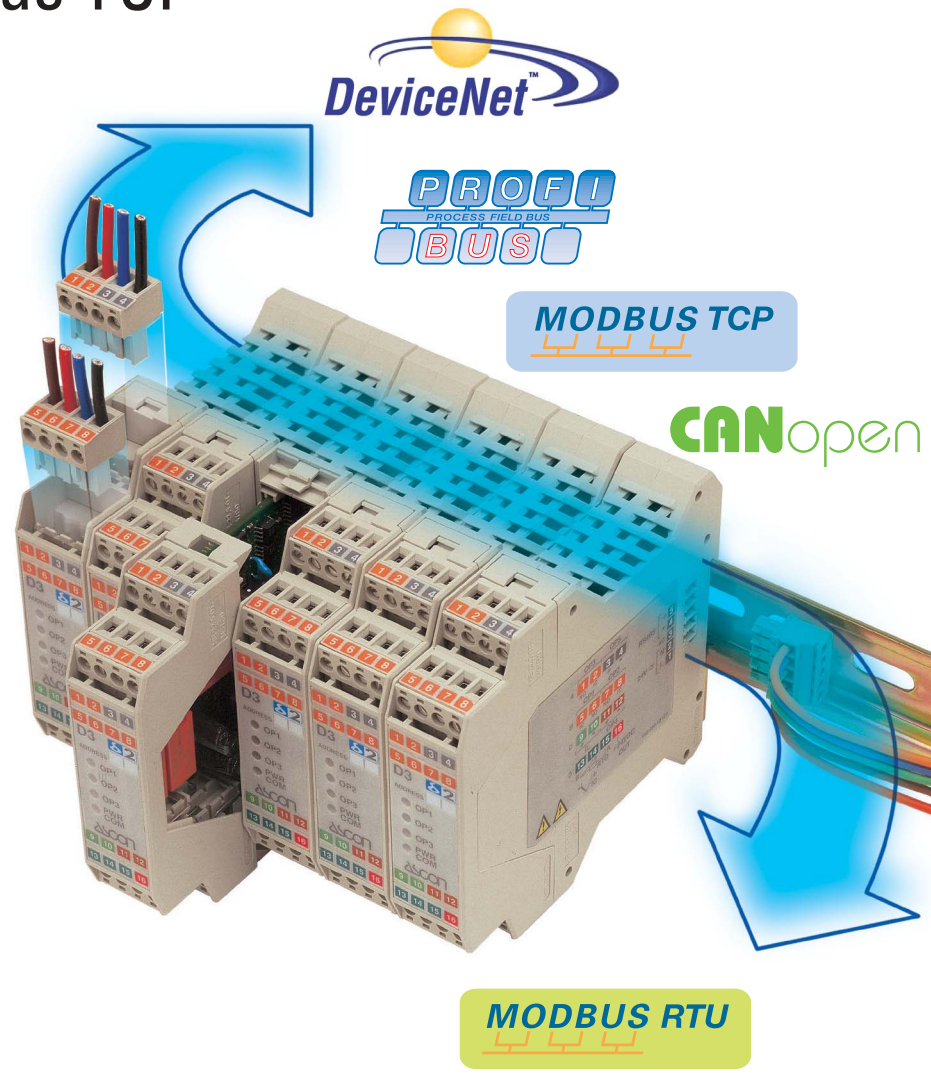
S E R I E S

deltadue® series gateways: PROFIBUS DP, DeviceNet, CANopen, Modbus TCP to Modbus RTU



Integrate Ascon instrumentation lines into your system

DX 5000 • Modbus RTU RS232/RS485 Line converter
• Modbus RTU RS485/RS485 Repeater
• Modbus RTU RS485/RS485 Line adapter

DX 5010 DeviceNet/Modbus RTU Gateway

DX 5050 Modbus RTU/Modbus RTU Protocol optimizer

DX 5070 PROFIBUS DP/Modbus RTU Gateway

DY 5020 Modbus TCP/Modbus RTU Gateway

DY 5030 CANopen/Modbus RTU Gateway

DY 5121 WebSCADA

DX 5100 delta**due** manager (4 modules)

DX 5200 delta**due** manager (8 modules)

DX 5300 delta**due** manager (16 modules)

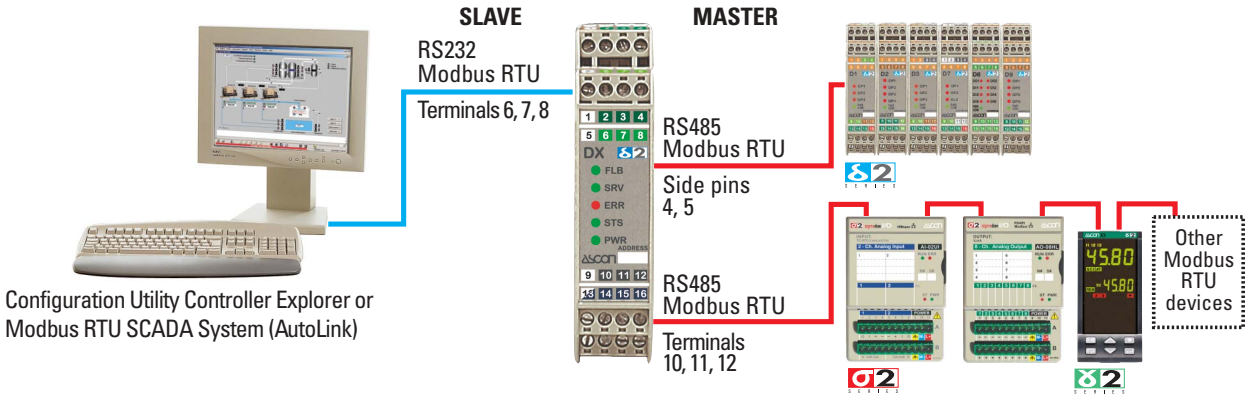
DX 5400 delta**due** manager (32 modules)

E

ISO 9001 Certified

DX 5000

RS232 → 2 x RS485 ModBus RTU converter

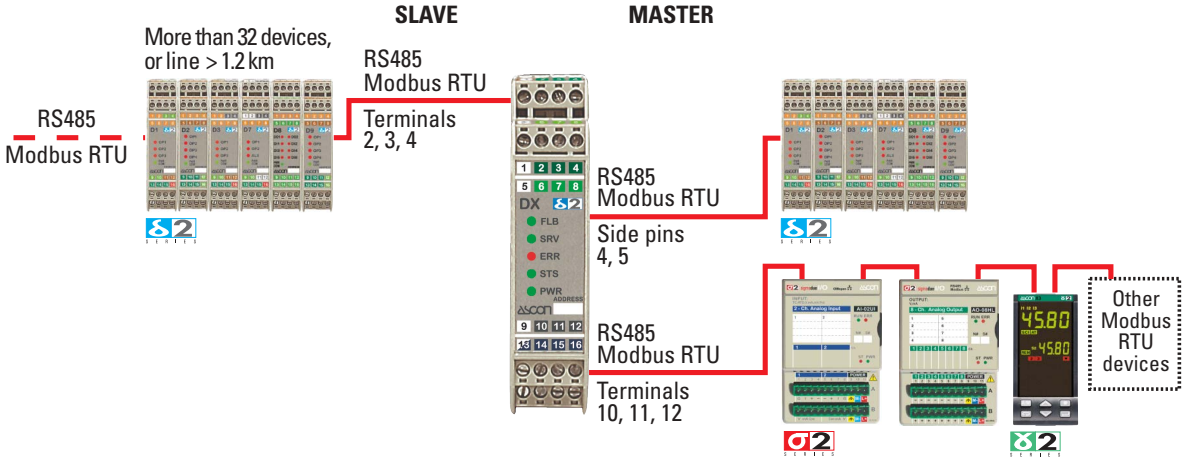


Minimal settings required for easy configuration:

- for the RS232 slave service port (terminals 6, 7, 8)
  - baud rate (1200...38400 baud)
  - number of characters + parity + stop bits (8N1, 8E1, 8O1, 8N2)
- for the RS485 master side port (terminals 4 and 5) and RS485 master front port (terminals 10, 11, 12)
  - baud rate (1200...19200 baud) (dip switches SW1)

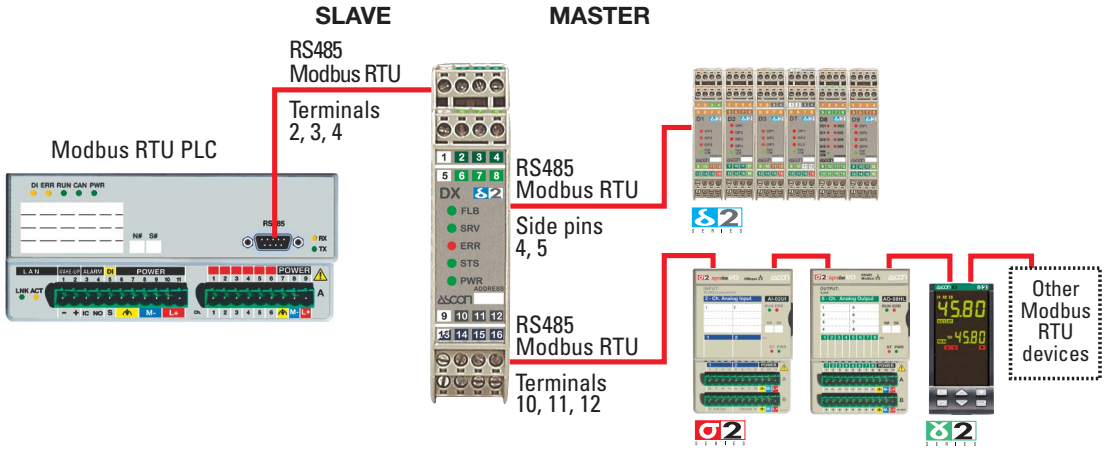
Up to 64 instruments with different addresses can be connected by means of the two RS485 master ports.

RS485 → 2 x RS485 ModBus RTU repeater



- RS485 line repeater increases the line signal and furthermore doubles the line.
- Service port (terminals 2, 3, 4) is used as RS485 slave.

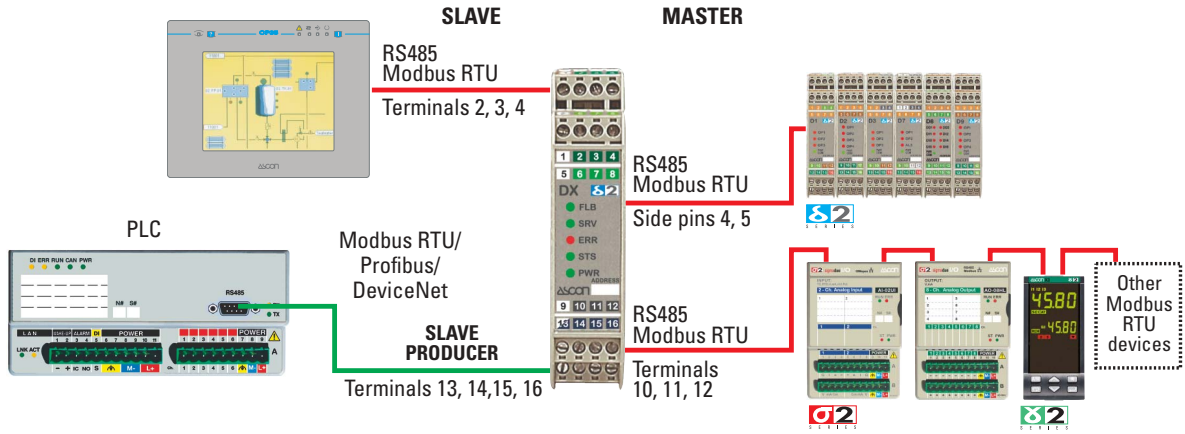
RS485 → 2 x RS485 ModBus RTU baud rate, parity and stop bits adapter



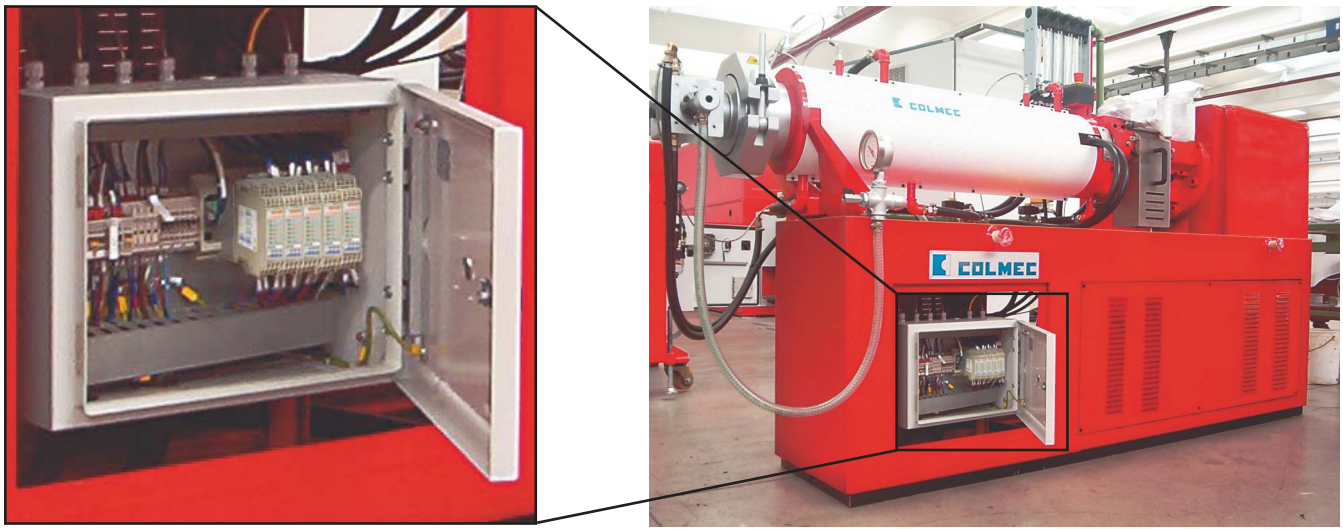
- To be used when the baud rate, parity and stop bits parameters of various modules are different and cannot be changed on the connected instruments.
- Easy configuration of the parameters on the DX5000.

DX 50x0

Modbus RTU, PROFIBUS, DeviceNet → 2 x RS485 Modbus RTU converter, double master



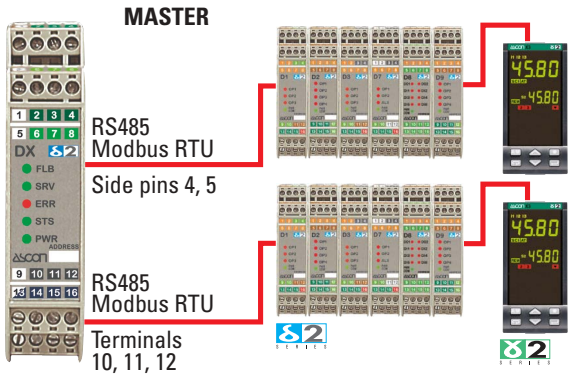
- Two masters can simultaneously access the instrumentation connected on Modbus RTU networks.
- One of the two masters must be Modbus RTU.
- The second master can be PROFIBUS or DeviceNet or Modbus RTU; the DX 50x0 converts these protocols to Modbus RTU.
- For example: the RS232 or RS485 service ports of DX 50x0 can be connected to an Ascon AutoLink self configuring SCADA or to a local operator panel; the slave Fieldbus port can be connected to any PLC using PROFIBUS, DeviceNet or Modbus RTU protocols.



COLMEC extrusion line with Siemens PLC. Control and data acquisition are made by using delta**due** series (D1, D8 and D9).
A gateway DX 5370 is installed to perform PROFIBUS-Modbus RTU data exchange and manager function for 16 instruments.

DX 5x00

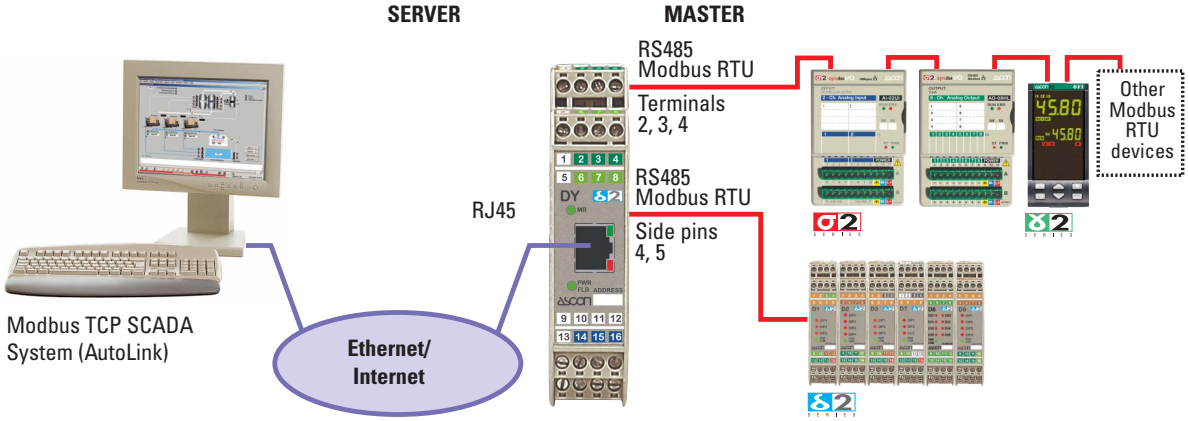
Manager for up to 32 devices (delta**due** and/or gamma**due** X1, X3, Q1, Q3)



- Memorization of the configuration and operator parameters of up to 32 connected instruments in Ascon gamma**due** and delta**due** series.
- Automatic configuration and parameterization of the new instrument in case of failure (hot swapping).
- Instrument configurations and parameters can be downloaded to the DX 5x00 when instruments are not yet installed (off-line configuration). Automatic configuration and parameterization of the new instruments when connected.

DY 5020

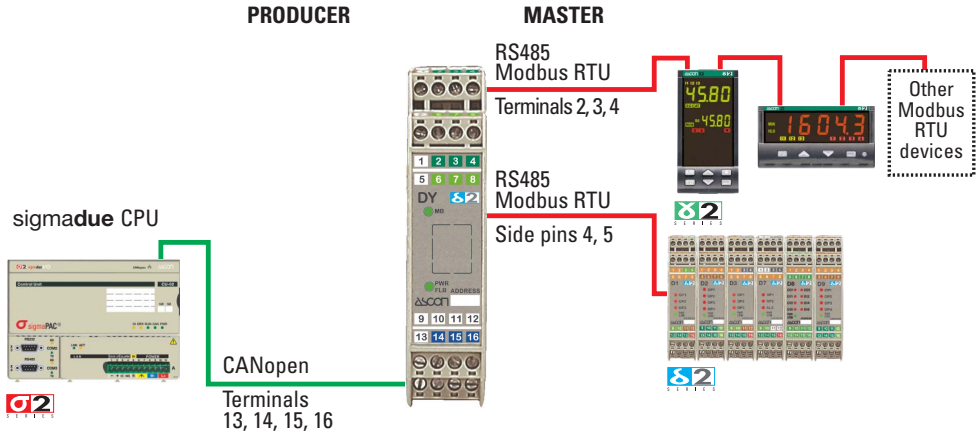
Modbus TCP → 2 x RS485 Modbus RTU converter



- Connects Ascon instrumentation in the gamma**due**, delta**due** and sigma**due** series, with Modbus RTU protocol to a PLC or SCADA with Modbus TCP protocol via an Ethernet network (e.g. the factory LAN) or the web. Can also connect any other device with Modbus RTU protocol.
- Two Modbus TCP / Modbus RTU conversion modes are available
  - Routing (transparent mode)
  - Natting (conversion using a configurable table)
- The network identifies the DY5020 by means of its IP.

DY 5030

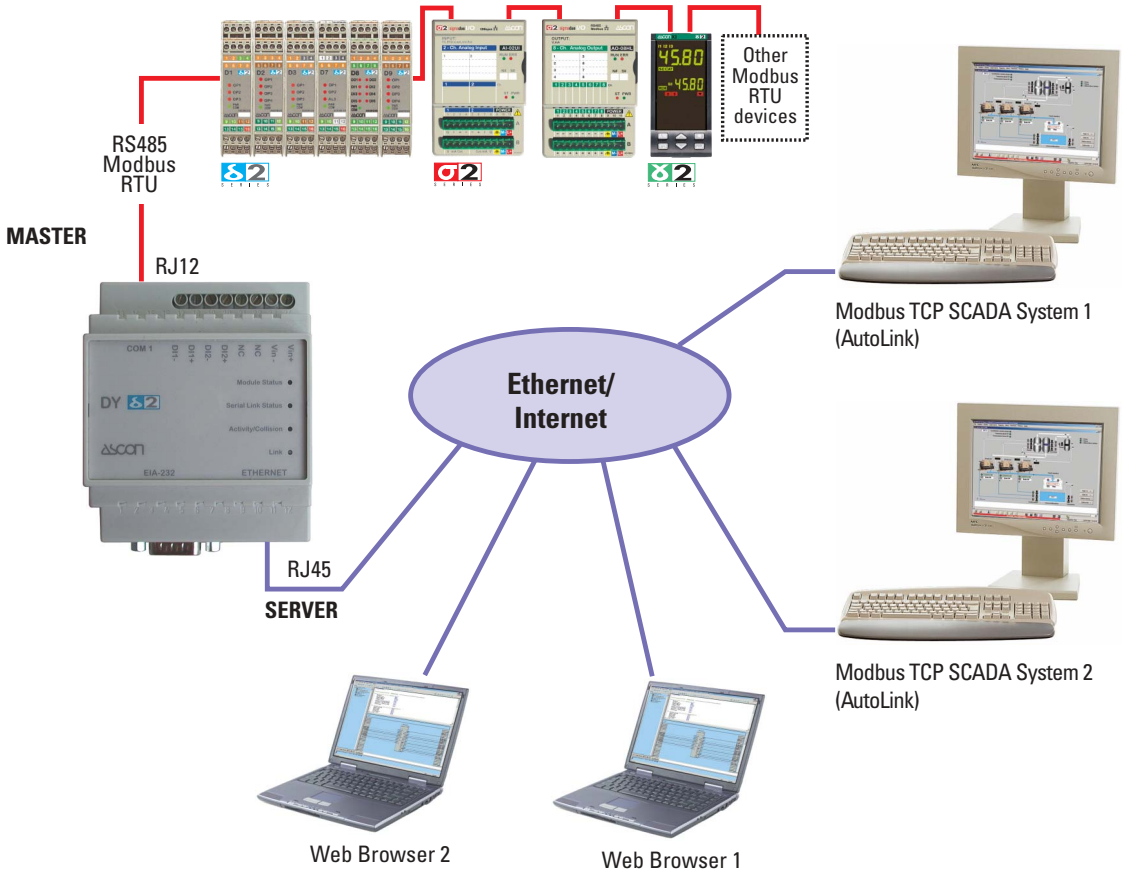
CANopen → 2 x RS485 Modbus RTU converter



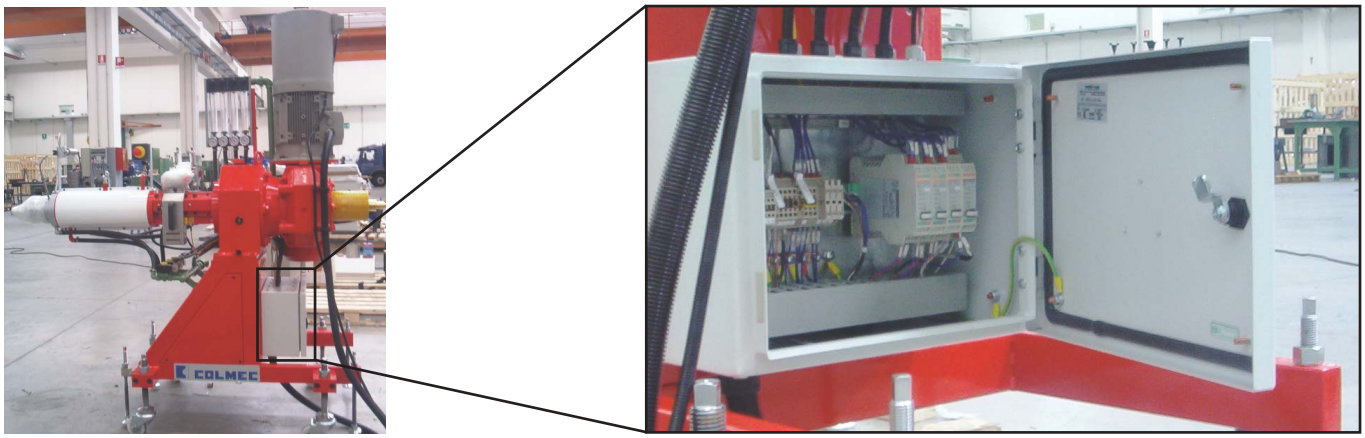
- Allows connection of Modbus RTU instrumentation to CANopen networks.
- DY5030 is not only a protocol converter but also supports the automatic PDO "change of status" transmission and the management of the data consistency information. The DY5030 is a real CANopen node.
- Main features include:
  - analogue and digital SDOs
  - 2 analogue RPDOs and one digital RPDO
  - 2 analogue TPDOs and one digital TPDO transmitted on
    - Remote request
      - Event (dead band for the analogue units and mask for the digital units)
      - Sync
- Data consistency check bit for each PDO
- Mask for the writing of the digital SDOs and RPDOs

DY 5121

WebSCADA and Modbus TCP → RS485 Modbus RTU converter



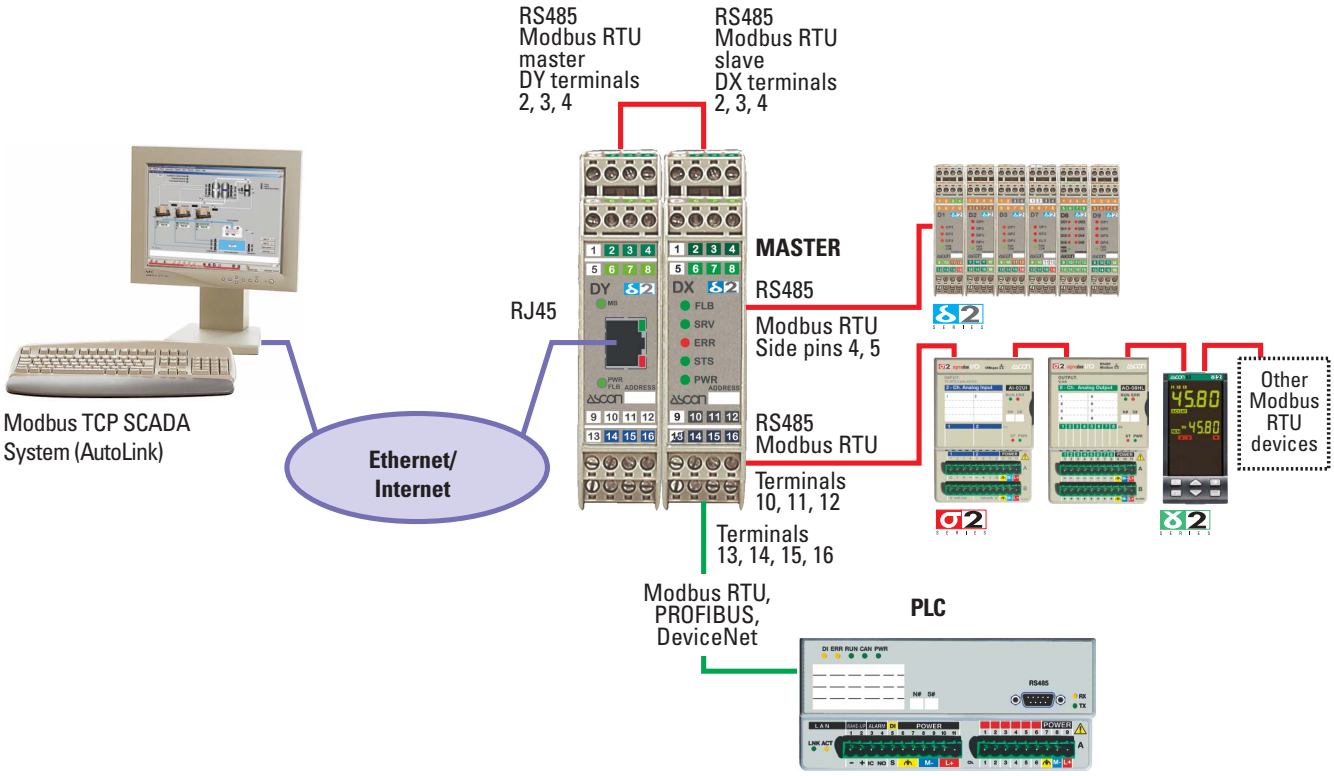
- Performs simultaneous multi client Modbus TCP / Modbus RTU conversion.
- Allows configuration of HTML pages for management of Modbus RTU instruments by using any web browser.
- The WebSCADA function includes:
  - Templates
  - Binding (data transfer)
  - 30 pages with 20 variables each
  - 64 alarms (e-mail and SMS with external analogue, GSM or GPRS modem)
  - Log file (.csv) of 64 variables, can be sent periodically via e-mail
  - Graphics (if JAVA is installed).



A further example of COLMEC extrusion line.

DY 5020 + DX 5xx0

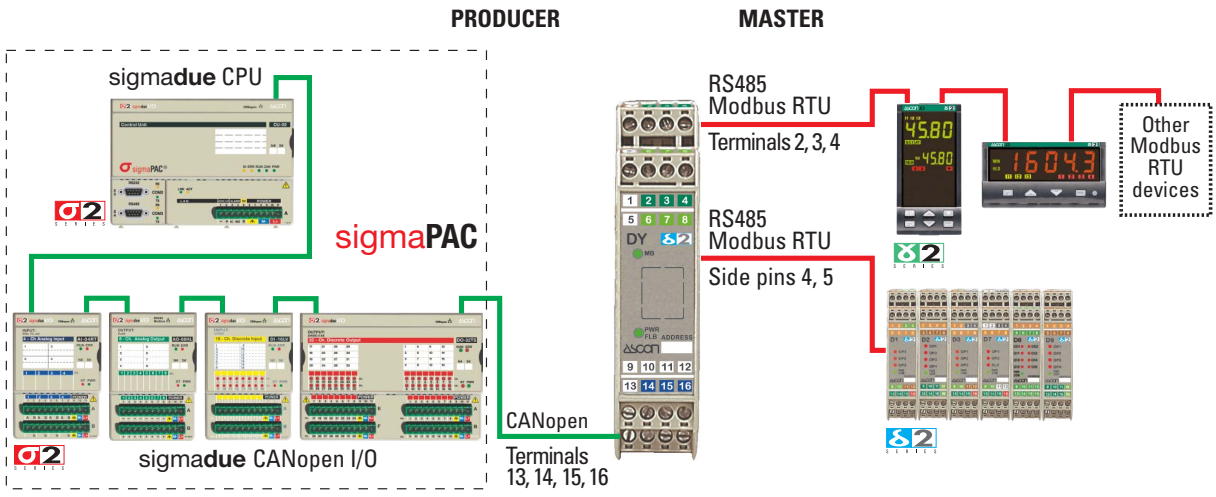
AutoLink Modbus TCP and PLC together as 2 different masters



- The combined use of one DY5020 and one DX5xx0 allows the simultaneous use of a Modbus TCP SCADA (e.g.: Ascon AutoLink) and a PLC (PROFIBUS or DeviceNet or Modbus RTU).
- The SCADA and the PLC can also share the same Modbus RTU instrumentation.

SigmaPAC + DY 5030

SigmaPAC with Modbus RTU I/O in CANopen network



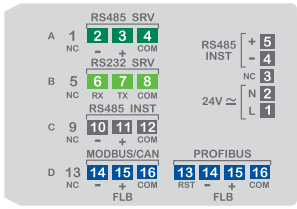
- Allows the use of Ascon Modbus RTU gamma**due** and delta**due** instruments as I/Os of the sigma**due** CPU.

Technical data

DX Line

Features	Description		
Functions	Manager	OFF line configuration and parameterization. Backup of the configuration and parameter data of the connected modules. Hot swapping, automatic configuration and parameterization of the replaced modules	
	Gateway	Network adapter for PROFIBUS DP, DeviceNet, Modbus RTU and RS485/RS232 line converter	
Communications ports	Instruments Bus	RS485 Modbus protocol master replicated on the terminal connectors (max. 19200 baud)	
	Service	RS485, RS232 Modbus protocol slave, isolated (max. 38400 baud)	
		RS485 Modbus protocol slave, isolated (max. 57600 baud)	
	Fieldbus	PROFIBUS DP slave	DP control: SPC3
			DP interface: RS485 isolated, max. 12 Mb/s
		CAN 2.0b, isolated, max. 1Mb/s	

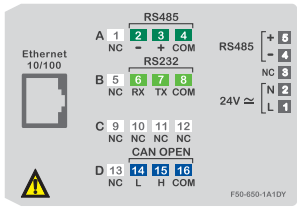
Electrical connections



DY Line

Features	Description	
Functions	WebSCADA	- templates - binding (data transfer) - 30 pages of 20 variables - 64 alarms (e-mail and SMS with external analogue modem, GSM or GPRS) - 64 variables log file (.csv), can be transmitted periodically by e-mail - graphics (if JAVA is installed)
Communications ports	Gateway	From CANopen or Modbus TCP to Modbus RTU
	Instruments Bus	RS485 Modbus protocol master replicated on connector A (max. 115200 baud)
	Service	RS232 standard (only for instrument configuration)
	Fieldbus	CAN 2.0b, isolated, max. 1Mb/s
		Ethernet 10/100 Mbaud, RJ45 female connector

Electrical connections



Common features

Features at env. 25°C	Description		
General characteristics	Power supply (PTC protected)	24Vac (-25...+12%) 50/60Hz and 24Vdc (-15...+25%)	Power consumption: 3W max.
	Safety	EN61010-1 (IEC1010-1), installation class 2 (2.5kV) pollution class 2, instrument class II	
	Electromagnetic compatibility	Compliance to the CE standards	
	UL and cUL approval	File E176452	
	Protection	Terminal strip IP20	
	Dimensions	Pitch: 22.5 mm - height: 99 mm - depth 114.5 mm	
	Weight	200 g max.	

Ordering codes

DX Line

	Line	Basic model				Accessories			
Model:	DX	5	B	C	0	–	0	0	0	0

No. of instruments backed up
Fieldbus communications
Instructions handbook

Number of instruments to be backed up	B
0	0
4	1
8	2
16	3
32	4

Fieldbus communications	C
None [1]	0
DeviceNet	1
RS 485 Modbus/Jbus	5
Profibus DP slave	7

Instructions handbook	F
Italian-English (standard)	0

If not differently specified the controller will be supplied with standard version
Model: DX 5000-0000

[1] The instrument perfoms the hardware convertion RS232/485 only for the standard Modbus RTU protocol.

DY Line

	Line	Basic model				Accessories			
Model:	DY	5	B	C	D	–	0	8	0	0

Function
Housing type
Instructions handbook

Function	B	C
Modbus TCP/RTU	0	2
CANOpen/Modbus RTU [2]	0	3
WEB server + Modbus TCP/RTU	1	2

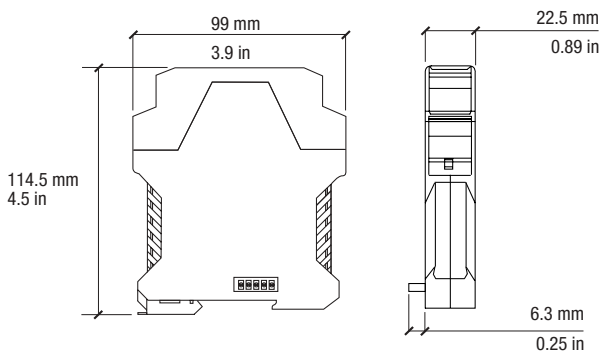
Instructions handbook	F
English (standard)	8

Housing type	D
delta**due** series	0
Standard 4 DIN	1

If not differently specified the controller will be supplied with standard version
Model: DY 5020-0800

[2] Not available when D = 1.

Mechanical dimensions



ASCON spa
Via Falzarego, 9/11
20021 Baranzate
(Milano) Italy
Tel. +39 02 333 371
Fax +39 02 350 4243
http://www.ascon.it
sales@ascon.it

ASCON FRANCE
2 bis, Rue Paul Henri Spaak
ST. THIBAULT DES VIGNES
F-77462 LAGNY SUR MARNE - Cedex
Tél. +33 (0) 1 64 30 62 62
Fax +33 (0) 1 64 30 84 98
www.ascon.fr
ascon.france@ascon.fr

AGENCE EST
Tél. +33 (3) 89 76 99 89
Fax +33 (3) 89 76 87 03

AGENCE SUD-EST
Tél. +33 (0) 4 74 27 82 81
Fax +33 (0) 4 74 27 81 71

ASCON CORPORATION
1884 East Fabyan Parkway
Batavia, Illinois 60510
Tel. +1 630 482 2950
Fax +1 630 482 295
www.asconcorp.com
info@asconcorp.com

WORLDWIDE NETWORK OF DIRECT SALES CENTRES, DISTRIBUTORS AND VARs

Europe
Belgium, Croatia, Czech Rep., Denmark, Esthonia, Finland, France, Germany, Great Britain, Greece, Holland, Ireland, Norway, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine

Americas
Argentina, Brazil, Canada, Chile, Colombia, Ecuador, Paraguay, Peru, Urugay, Venezuela

Rest of the world
Algeria, Australia, China, Egypt, Hong Kong, India, Indonesia, Iran, Israel, Malaysia, Marocco, New Zeland, Pakistan, Saudi Arabia, Singapore, Taiwan, Thailand, Tunisia, S outh Africa & South East Africa, UAE

The specifications in this document may therefore be changed without notice - All trademarks mentioned int this document belong to their respective owners